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ABSTRACT

North Carolina developed a K-9 traffic safety curriculum that was pilot tested during the 1974-75 school year in four public school systems. A revised curriculum was implemented in seven additional school systems between 1975 and 1977. This latter curriculum was evaluated in terms of changes in student knowledge, teachers' reactions to and use of curriculum materials, and principals' administrative appraisals of the program. Changes in knowledge were determined by administering pre- and post-curriculum tests in experimental and control schools at the third and sixth grade levels. Findings revealed a significant difference in knowledge acquired during the time the curriculum was in use, especially among third graders, and a greater use of curriculum materials by teachers at the K-1, 2-3, and 4-6 levels than by those at grades 7, 8, and 9. Generally, the teachers who reported using the various content area materials found them to be either of moderate or considerable value, appropriate for the grade level, and either moderately or highly interesting to the students. Principals unanimously reported that the K-9 traffic safety curriculum should be incorporated as a permanent part of the school curriculum, that most of the teachers entered the program and taught the curriculum with enthusiasm, and that no administrative problems were experienced. Knowledge tests, questionnaires, and tables of data are appended. (Author/RH)

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AN EVALUATION OF THE EXPANDED K-9 TRAFFIC SAFETY EDUCATION CURRICULUM IN NORTH CAROLINA

Susan S. Padgett

October 1977

-Reprint-

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ABSTRACT

North Carolina developed a K-9 traffic safety curriculum that was pilot tested during the 1974-75 school year in four public school systems. The University of North Carolina Highway Safety Research Center (HSRC) evaluated the effectiveness of that program and provided recommendations for revision. A revised curriulum was implemented in seven additional school systems between 1975 and 1977. This revised curriculum was evaluated in terms of changes in student knowledge, teachers' reaction to and use of curriculum materials, and principals' administrative appraisal of the program.

Changes in knowledge were determined by administering pre- and post-curriculum tests in experimental and control schools at the third and sixth grade levels. It was found that there was a significant difference between experimental and control groups in knowledge acquired during the time period the curriculum was in use. Further analyses showed that the findings were primarily attributable to the improved performance of third graders.

The teachers' reaction to and use of the curriculum materials was determined by a questionnaire survey. Questionnaires were developed for teachers of grades K-1, 2-3, 4-6, 7, 8 and 9. Of the 419 teachers surveyed, 63.7 percent returned the questionnaires. It was found that the teachers at the K-1, 2-3, and 4-6 levels made much greater use of the curriculum materials than did the teachers at grades 7, 8 and 9. Because so few junior high level teachers used the materials, no detailed analyses were performed at these levels.

Of the teachers reporting, most rated the curriculum "good," used it "considerably" or "somewhat," used it either integrated into the existing

curriculum or both as a separate unit and integrated into the existing curriculum, and found using the materials to be "reasonable."

The majority of the teachers reporting said they used the curriculum materials asked about, with the exception of minicycle safety and farm vehicle safety at the 4-6 grade level. In the main, the teachers who reported using the various content area materials considered them to be either of moderate or considerable value, appropriate for the grade level and either moderately or highly interesting to the students.

The prinicipals' administrative appraisal of the program was also determined by a survey questionnaire. The principals were asked about their acceptance of the program, the enthusiasm of the teachers, in-service training and administrative problems. Principals from 25 schools currently using the curriculum were surveyed and 80 percent completed and returned the questionnaires.

Principals were fairly unanimous in reporting that the K-9 traffic safety curriculum should be incorporated as a permanent part of the school curriculum, that most of the teachers entered the program and taught the curriculum with enthusiasm, and that no administrative problems were experienced.

Both teachers and principals were asked to provide additional information concerning their recommendations for changing and improving the curriculum. On the basis of the findings the following recommendations are made:

1. Because the teachers' suggestions for changes in the curriculum are indicative of concern among the teachers, they should be given consideration when revisions are made.

2. Because the materials seem to be used so little on the 7-9 grade level, additional effort should be devoted to developing materials that can readily be integrated into the existing junior high program.

3. The entire package of traffic safety materials, including the games, signs, films, and filmstrips, should be made more accessible to the teachers.

4. Possibilities should be explored for providing some type of in-service training for the teachers involved in any further expanded program.

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I. INTRODUCTION

Statistics show that in 1975 53,180 pedestrians and 28,190 bicyclists were either injured or killed in traffic related accidents in the United States. Moreover, among these individuals about 45 percent of the pedestrians and 69 percent of the bicyclists were under age fifteen. To help combat this problem, the State of North Carolina has developed a comprehensive traffic safety curriculum designed for grade levels K-9 to be used in the public schools of the State.

During the 1974-75 academic year, the K-9 traffic safety curriculum was pilot tested in four North Carolina school systems. The University of North Carolina Highway Safety Research Center in cooperation with the North Carolina Department of Public Instruction and the Research Triangle Institute evaluated the curriculum in terms of changes in pupil knowledge, changes in pupil behavior, and teachers' reaction to and use of the curriculum materials (Padgett and Waller, 1975). Based on the findings of this evalution, revisions in the curriculum materials were made.

The revised curriculum was then reproduced and implemented in seven additional school systems in the State during the 1975-76 and 1976-77 academic years. The purpose of this project was to evaluate the revised and expanded K-9 traffic safety program during the 1976-77 school year. The program was evaluated in terms of changes in pupil knowledge, teachers' reaction to and use of curriculum materials, and principals' appraisal of the program from the standpoint of administration.

II. METHODOLOGY

The evaluation of the revised K-9 traffic safety program was conducted in three parts. The first concerned the extent to which the pupils showed an increase in traffic safety knowledge as a result of the program. The second concerned the teachers' acceptance and use of the curriculum materials. The third concerned the principals' acceptance of the program and the ease with which the program was implemented from an administrative standpoint.

Knowledge Testing

To determine the change in pupil knowledge, tests were developed for the third and sixth grade levels based on the revised curriculum materials designated for those grade levels. Knowledge tests were not used at grades 7, 8, or 9 because of problems in locating enough experimental and control schools that could implement the program during the project period. The tests consisted of thirty items each. The third grade test covered the content areas of pedestrian safety, bicycle safety, school bus safety and passenger safety. The sixth grade test covered those same areas plus minicycle safety. The knowledge tests appear in Appendix A, with a table presenting the content area represented by each item.

The knowledge tests were administered to third and sixth grade students in experimental schools before the curriculum was implemented and in comparable control schools where the curriculum was not introduced. After the curriculum had been taught in the experimental schools, the same tests were administered to the same students previously tested in both the experimental and control schools. A comparison of the after versus before differences for the experimental and control test scores was used to indicate how much knowledge the students gained in the various content areas as a result of the

program. A number of statistical tests were used to determine whether the change in knowledge was large enough to be significant. The basic experimental design is outlined in figure 1.

Figure 1. Basic experimental design used to determine changes in pupil knowledge.

	BEFORE	AFTER
Experimental Schools (Exposure to Curriculum)	Knowledge Time 1	Knowledge Time 2
Control Schools (No Exposure to curriculum)	Knowledge Time 1	Knowledge Time 2

The sample for the knowledge testing was drawn from schools in two different school systems. Both experimental and control schools were chosen within each system on the basis of input from local school administrators as to which schools were most comparable. A sample of 102 experimental and 102 control third grade students; and 136 experimental and 133 control sixth grade students was secured. Only the students who took both the pre and post tests were included. A breakdown of the sample for knowledge testing by grade level, school system and experimental group is shown in Table 1.

Teacher Survey

For the second part of the evaluative study, different versions of questionnaires were developed for grade levels K-1, 2-3, 4-6, 7, 8, and 9 to be completed by teachers participating in the program. All teachers were asked several overall questions about the K-9 traffic safety curriculum. In addition,

different teachers were asked more detailed questions about specific content areas covered in the volume of the curriculum designed for their grade level.

To reduce the demand on the teachers' workload, each elementary school teacher was asked questions about one content area only. The content areas were equally and randomly assigned to the teachers. However, in the case of the junior high teachers, this procedure could not be followed due to the small number of teachers at the 7-9 grade levels. The seventh grade teachers were asked about all three content areas, each eighth grade teacher was asked about three of six content areas, and the ninth grade teachers were asked about all four content areas. Table 2 presents a breakdown of the questionnaire content areas by grade level(s).

The questionnaire was designed to provide feedback on the teacher's overall appraisal of the curriculum, the extent to which they used the materials, the extent to which they integrated them into their other activities, and their suggestions for changes and improvements. In addition, as indicated above, items were included on specific areas to provide more detailed information on the teachers' use of and reaction to the various content area materials. Appendix B presents the different versions of the questionnaire.

The Department of Public Instruction provided a listing of the teachers in schools involved in the K-9 traffic safety program. Some of these teachers were from schools which first implemented the curriculum during the 1975-76 academic year and others were from schools which initiated the curriculum during the 1976-77 academic year. However, all of these teachers were from schools currently using the curriculum, i.e. during the 1976-77 academic year. Each of these teachers was mailed a questionnaire during the middle of the spring semester. Two weeks later, follow-up letters were mailed to all teachers who had not yet responded to the questionnaire. All questionnaire responses were recorded. A breakdown of the teacher sample by year of school implementation and grade level is shown in Table 3.

Principal Survey

For the third part of the evaluation, questionnaires were developed to be completed by principals of schools where the program had been implemented. Sixteen of these schools initiated the curriculum during the 1975-76 school year and nine during the 1976-77 school year. All schools were currently using the curriculum. A list of the prinicipals of these schools was obtained from the Department of Public Instruction. Each principal was mailed a questionnaire designed to elicit information concerning the principal's acceptance of the curriculum and to pinpoint problem areas in the administration of the program. The questionnaire to the principals and the subsequent follow-up letters were mailed at the same time as those sent to the teachers. All questionnaire responses were recorded. The questionnaire to principals is presented in Appendix C.

Sampling Problems

One problem encountered was obtaining an adequate sample size. It was originally intended that a sample of third, sixth, and ninth grade students from experimental and control schools be tested on traffic safety knowledge both before and after the teaching of the curriculum in the experimental schools where the program was being implemented for the first time during the 1976-77 academic year. As explained earlier, both experimental and control schools were to be drawn from within the same school system. However, there was no experimental school available that included the ninth grade, was starting the program during the 1976-77 academic year, and was located in a school system where access to control ninth grade schools could also be obtained. Therefore, the knowledge testing was limited to the third and sixth grade levels.

Another problem encountered was securing an adequate sample for the teacher and principal surveys. It was originally intended that questionnaires would be mailed to a sample of 610 teachers from 35 schools and all the prin-

cipals from these schools. However, it was later learned from school principals and other school administrators that the decision had beer made to postpone the program in ten schools for another year. The reasons for this decision included a fire in one school, too many other new programs being initiated, and a desire for additional inservice training from the Department of Public Instruction. Because of these factors, only 419 teachers and 25 principals were surveyed.

III. RESULTS

Knowledge Tests

One measure of success for the K-9 curriculum is to determine whether there was a larger increase in the amount of safety knowledge possessed by individuals who had been exposed to the curriculum than might otherwise be expected. The knowledge tests were constructed to assess the safety knowledge of the participants and the experimental design was selected to insure proper assessments.

In order to obtain a more detailed evaluation of the K-9 curriculum, the knowledge test was broken down into five areas: pedestrian safety, bicycle safety, school bus safety, passenger safety, and minicycle safety (for sixth grade only).

To evaluate the effect of the K-9 curriculum, two sets of analyses were carried out. The first analysis tested for an overall difference between Experimental and Control groups on the after-exposure test after controlling for their scores on the before-exposure test. The second group of analyses examined the effect of exposure on each of the safety areas.

1. Overall Test. Table 4 reports the means on the before and after tests for the various groups of students. The before test results provide a baseline which enables one to detect differences on the after tests which are independent of any differences in the before test. The statistical test used was the multivariate analysis of covariance where the scores on the after test were the criteria variables and the before test scores served as the covariates (Tatsuoka, 1971). Since the third graders were not administered the minicycle safety program, multivariate analysis was not performed on this portion of the knowledge test.

The results indicate that there is a significant overall difference between the scores on the after test for the experimental and control groups.

This may be interpreted as indicating that exposure to the curriculum was responsible for the observed differences. Another examination of Table 4 indicates that there are more knowledge increases for the experimental groups.

A significant difference ($p<.001$) was also obtained for the two grades, but since the tests for each grade were different and no attempt was made to develop equally difficult tests, it is hard to draw any conclusion from this finding. The interaction between exposure and grade was significant ($p<.001$), indicating that the curriculum was differentially effective between the two grade levels.

2. Univariate tests. While the preceding analysis is essential in determining the presence or absence of curriculum exposure effect, univariate tests must be made to determine which of the content areas are most effective and at which grade level. A simple analysis of covariance was performed on the after test scores with the before test scores as the covariate for each grade level and curriculum content area.

Table 5 reports the probabilities that the results that were obtained could be a result of chance. Clearly the third grade curriculum is much more effective in increasing the students' safety knowledge than is the sixth grade curriculum. When the sixth grade data are examined none of the safety areas showed significant differences between experimental and control pupils, although the bicycle, school bus, and minicycle curricula were marginally successful ($p<.21$) in increasing knowledge. Thus the significant findings for the total curriculum were attributable primarily to the improved performance of the third grade students exposed to the traffic safety education curriculum. It is not clear, of course, whether the lack of effect at the sixth grade level was due to the poor quality of the curriculum at that level or the high level of safety knowledge of sixth graders that was already present.

Teacher Survey

Questionnaires were developed to determine the teachers' reaction to and use of the curriculum materials. Teachers (N=419) from 25 schools that were using the curriculum during the 1976-77 academic year were mailed questionnaires. Of these teachers, 267, or 63.7 percent returned the questionnaires. The following results are based on the questionnaire responses.

Reported Use and Non-Use of the Curriculum Materials by Grade Level

If the teachers had not used the curriculum during the current academic year, they were requested to mark a box at the top of the questionnaire and to return the questionnaire otherwise uncompleted. If, on the other hand, they had used some or all of the materials for their grade level, they were requested to complete several overall questions about the curriculum package as well as some detailed questions about specific content area(s) used. Of the teachers who returned the questionnaire, a sizable majority, at least 76.5 percent, from each of the grade level categories K-1, 2-3, and 4-6 indicated use of the materials in contrast to only 27.3 percent of the 7-9 grade category (see Table 6).

Because such a small number of the junior high teachers used the curriculum, no detailed analyses were performed for that group. The high rate of nonuse seems to indicate that problems previously detected in the earlier evaluation are still present. The reasons for these problems cannot be determined from the present study; however, it appears that more effort may be needed to develop materials that can readily be integrated into the junior high program.

Overall Curriculum Appraisal

Teachers were asked to check their overall appraisal of the K-9 traffic safety curriculum. Over 90.0 percent of the teachers in each of the grade

level categories K-1, 2-3, and 4-6 checked either "excellent" or "good", with the majority checking "good" (see Table 7).

Extent of Curriculum Use

Table 8 presents the extent of curriculum use by the teachers by grade level. At all grade levels, a large proportion, over 73.0 percent, indicated using the curriculum either "somewhat" or "considerably."

Context of Curriculum Use

Teachers were asked to indicate the context in which they used the curriculum materials, i.e., as a separate unit, integrated into existing curriculum, or a combination of the two. Over 40.0 percent of the teachers from the K-1 and 4-6 grade categories, and over half of the teachers from the 2-3 grade category used the curriculum "both" as a separate unit and integrated into the existing curriculum. Less than a fifth of the teachers from all the grade categories reported using the curriculum "solely" as a separate unit. These data are shown in Table 9.

Ease of Use of Curriculum Materials

Teachers were asked to indicate whether they found using the materials to be "very difficult", "somewhat difficult", "reasonable" or "easy". For every grade level category, over two-thirds of the teachers indicated using the materials to be "reasonable" and about one-fourth indicated "easy". These data may be seen in Table 10.

Comments Concerning the Overall Curriculum

The last item in Section 1 of the questionnaire concerning the overall curriculum asked the teachers to provide suggestions for changes (including additions and deletions) and comments concerning the curriculum materials. Of the 190 K-6 teachers who used the curriculum, 83 or 43.7 percent volun-

tarily responded to this questionnaire item. These recommended changes and comments are listed by grade level categories in Table 11 and 12.

With regard to changes, teachers requested more songs, games, pictures, films, filmstrips, records and tapes. A need for greater emphasis on school bus safety and material relevant to rural children was also expressed. Desired additions to the curriculum included something for the students to keep, life-size road signs, and hidden word puzzles. Concerning the masters for reproduction, teachers indicated a need for easier masters, masters with more depth, and masters with more creativity. A few teachers recommended placing the activities on only one side of the page for better thermofaxing. Many teachers indicated that no changes in the materials were desired.

With regard to other comments, a large number of teachers expressed a general satisfaction with the curriculum. Words used to describe the materials included excellent, good, satisfactory, adequate, thorough, complete, useful, helpful, interesting, informative, etc. Parts of the curriculum specifically mentioned as good were the school bus materials, safety booklet, Jiminy Cricket series, "All Ears", bike clinic, skill games, and puzzles. On the other hand, some teachers indicated that the materials were too difficult. Materials specifically mentioned as difficult included bar graphs, games, masters, and a bicycle III concept. One teacher felt the farm vehicle materials were not relevant. A few teachers indicated that covering all the materials was a problem.

Specific Content Areas

As explained earlier, to reduce the teacher workload, the K-6 grade teachers were asked questions about only one content area included in the volume of the curriculum designed for their grade level. First, they were asked if they taught the area. If they did not teach it they were asked to explain why.

If they did teach it they were requested to complete the additional content area questions. Because there were so many areas, and because the number of teachers reporting use of these different areas was so small, the data concerning the specific curriculum areas are sparse.

Reported Teaching and Nonteaching of the K-1 Content Areas

Teachers were asked whether they taught one of four areas included in the K-1 curriculum volume, i.e., pedestrian, bicycle, passenger or school bus safety. Of the teachers who returned questionnaires about these areas, 66.6 percent taught bicycle safety, 83.3 percent taught passenger safety, 90.0 percent taught school bus safety, and 91.7 percent taught pedestrian safety. These data are shown in Table 13.

Reasons provided for not teaching an area included not enough time, students not permitted to ride bicycles out of yard, curriculum materials arrived too late, and plan to teach area at a later date.

Overall Value of K-1 Content Area Materials

For each of the K-1 content areas, all of the teachers who were asked about the area appraised it as either of "moderate value" or of "considerable value" with the majority indicating "considerable value" (see Table 14).

Grade Level Appropriateness of the K-1 Content Area Materials

For each of the content areas the majority of the teachers, at least 60.0 percent, indicated that the area materials were appropriate for the K-1 grade level (see Table 15).

Interest Value of the K-1 Content Area Materials

Teachers were asked whether the students found specific K-1 content area materials to be dull or interesting. For each content area, a sizeable majority, at least 80.0 percent, checked either "moderately interesting" or "highly interesting". These data are shown in Table 16.

Helpfulness of the K-1 Content Area Materials

For the various content areas, teachers were asked about what was most and least helpful of the materials. Because such a small number of the teachers, ten or fewer, provided a response regarding any one area, no discussion concerning these responses is presented. However, the actual data may be seen in Tables 17 and 18.

Comments Concerning the K-1 Content Area Materials

Teachers were asked to write their comments concerning the content areas. Of the 59 K-1 teachers who used the curriculum, 17 or 28.8 percent provided comments concerning the content area assigned to their questionnaire. These comments are listed in Table 19.

Reported Teaching and Nonteaching of the 2-3 Content Areas

Of the teachers who were asked about the content areas for grades 2-3, over four-fifths taught passenger and bicycle safety and all taught pedestrian and school bus safety (see Table 20).

Reasons provided for not teaching an area included children not encouraged to ride bicycles until the third and fourth grades, could not cover all the material in manual, and plan to teach at a later date.

Overall Value of the 2-3 Content Area Materials

For each of the 2-3 level content areas, all of the teachers who reported using the materials considered them to be either of "moderate value" or of "considerable value" (see Table 21).

Grade Level Appropriateness of the 2-3 Content Area Materials

For each of the 2-3 level content areas, over three-fourths of the teachers who reported teaching the area indicated that the materials were "appropriate" for the grade level. A small proportion, less than a fifth for each

area, indicated that the materials were "a little too difficult." These data are shown in Table 22.

Interest Value of the 2-3 Content Area Materials

With regard to the interest value of the 2-3 area materials for the students, the majority of the teachers who were asked about school bus safety and passenger safety considered them to be "moderately interesting", and the majority who were asked about pedestrian and bicycle safety considered them to be "highly interesting" (see Table 23).

Helpfulness of the 2-3 Content Area Materials

Only a small number of teachers, 15 or fewer, for each of the content areas, indicated which type of materials they considered most and least helpful. A detailed discussion of these findings therefore, is not included; however, the acutal data may be seen in Tables 24 and 25.

Comments Concerning the 2-3 Content Areas Materials

Of the 69 teachers at the 2-3 grade level using the curriculum, 21 or 30.4 percent voluntarily provided comments concerning the content areas included in the volume of the curriculum designed for the 2-3 grade level. These comments are listed in Table 26.

Reported Teaching and Nonteaching of the 4-6 Level Content Areas

Of the 4-6 grade teachers who were asked about the content areas, a majority reported teaching pedestrian safety, bicycle safety, school bus safety, and passenger safety; half reported teaching minicycle safety; and less than half reported teaching farm vehicle safety (see Table 27).

Reasons provided for the nonteaching of an area included the following; safety not scheduled in my curriculum, material of little value, material not as relevant to my age group as other units, not enough time, and plan to teach at a later date.

Because the actual number of teachers who reported teaching each of the 4-6 content areas is so small the findings that follow might not be representative of the 4-6 grade teacher opinions.

Overall Value of the 4-6 Content Area Material

At least 90.0 percent of the teachers within each content area judged the materials to be either of "moderate value" or of "considerable value" (see Table 28).

Grade Level Appropriateness of the 4-6 Content Area Materials

Within each content area, at least 80.0 percent of the teachers considered the materials "appropriate" for the grade level with the exception of the passenger safety area where two-thirds considered them "appropriate" and one-third considered them "too easy". These results are presented in Table 29.

Interest Value of the 4-6 Content Area Materials

For each of the curriculum areas, at least 80.0 percent of the teachers indicated that the students found the materials to be either "moderately interesting" or "highly interesting". These results are shown in Table 30.

Helpfulness of the 4-6 Content Area Materials

The number of teachers within an area indicating the type of materials most and least helpful ranged from one to nine. No analysis of these responses is provided, but the data may be seen in Tables 31 and 32.

Comments Concerning the 4-6 Content Area Materials

Approximately one-fourth of the 62 4-6 grade teachers reporting use of the curriculum provided comments concerning the specific 4-6 grade content areas. These comments are listed in Table 33.

Principal Survey

Questionnaires were developed for the principals to determine basically the principals' acceptance of the program, teachers' enthusiasm about the program from the principals' viewpoint, the need for inservice training, and problem areas in the administration of the program. Twenty-five principals from schools currently using the curriculum were mailed a questionnaire. Of these principals, 20 or 80 percent completed and returned the questionnaire. Thirteen of these principals were from schools which incorporated the curriculum during the 1975-76 school year, and seven were from schools which implemented the curriculum during the 1976-77 school year. The following information was provided in the returned questionnaires.

Curriculum as Permanent Part of School Program

The principals were asked if they felt the K-9 Traffic Safety Curriculum should be incorporated as a permanent part of the school curriculum for grade levels K-1, 2-3, 4-6, and 7-9. For every grade level category at least 94.0 percent of the responses were positive; however, 30.0 percent of the principals did not respond concerning grade levels 4-6 and 7-9. These data are shown in Table 34.

Enthusiasm of Teachers Entering Program

Table 35 presents the results from a question that asked whether the teachers entered the program with enthusiasm. Three-fourths of the principals reported "some" enthusiasm, and one-fourth reported "much' or "very much" enthusiasm.

Enthusiasm of Teachers after Several Weeks of Curriculum Use

A question was also asked concerning the level of teacher enthusiasm after several weeks of curriculum use. The reported enthusiasm was slightly greater

than that upon entering the program with 70.0 percent reporting "some" enthusiasm and 30.0 percent reporting "much" or "very much" enthusiasm (see Table 36).

Inservice Training

Three-fourths of the principals expressed a desire for some kind of inservice training for the teachers (see Table 37). Suggestions for this training included the following: examine materials and plan activities; demonstrate ways to explain material and to involve students; explain the more complicated activities; provide exposure to the general scope of the program; present an overview of the program; and discuss safety rules and regulations in traffic situations. One principal suggested that the training be provided through a film or television presentation.

Administrative Problems

Only one of the twenty principals reported any administrative problems. He indicated that it took too long to get the materials (see Table 38).

Comments

The last item on the questionnaire requested the principals to write their comments including suggestions for changes concerning the K-9 Traffic Safety Program. Thirteen of the principals responded to this item. All of these comments are listed in Table 39.

SUMMARY AND CONCLUSIONS

North Carolina developed a K-9 traffic safety curriculum to be used in the public schools of the State. This curriculum was initially pilot tested during the 1974-75 school year in four North Carolina school systems. The UNC-HSRC evaluated the effectiveness of the newly implemented program to provide feedback for the revision of the curriculum materials (Padgett and Waller, 1975). After the first evaluation, revisions in the curriculum were made.

The revised curriculum was then implemented in seven additional North Carolina school systems during the 1975-76 and 1976-77 school years. During the 1976-77 school year, the UNC-HSRC evaluated the revised and expanded program in terms of changes in student knowledge, teachers' reaction to and use of curriculum materials, and principals' administrative appraisal of the program.

The changes in student knowledge were measured by administering pre and post tests in experimental and control schools. The schools selected were from two different school systems. Within each school system, both experimental and control students were tested. The sample for the knowledge testing included 102 experimental and 102 control third grade students; and 136 experimental and 133 control sixth grade students.

It was found that there was a significant difference in knowledge between experimental and control groups in knowledge acquired during the time period the curriculum was in use. Further analyses showed that the findings were primarily attributable to the improved performance of the third graders where all curriculum areas resulted in improved performance.

The teachers' reaction to and use of curriculum materials was determined through a questionnaire survey. Questionnaires were developed for teachers of grades K-1, 2-3, 4-6, 7, 8 and 9. All teachers were asked several common

questions concerning the overall curriculum. In addition, K-6 teachers were asked questions about one specific content area, and 7-9 teachers were asked about three or four content areas. The sample consisted of 419 teachers in schools currently involved in the K-9 traffic safety program. Of the teachers surveyed, 63.7 percent returned the questionnaires.

Of the teachers who returned the questionnaires, over three-fourths reported using the curriculum from grades K-1, 2-3, and 4-6 compared to less than one-third from grade levels 7-9. Because such a small number of junior high teachers (N=12) reported use of the curriculum, no detailed analyses were performed for that group.

Of the teachers who reported using the curriculum, most rated it "good"; used it "considerably" or "somewhat"; used it either integrated into the existing curriculum or "both" as a separate unit and integrated into the existing curriculum; and found using the materials to be "reasonable".

Approximately 44.0 percent of the teachers returning the questionnaire provided comments concerning the overall curriculum. For the most part, teachers indicated a general satisfaction with the materials. A few of the teachers indicated that some of the materials were too difficult. Suggested revisions included more songs, films, filmstrips, records and tapes; and a greater emphasis on school bus safety and information relevant to rural children. Desired curriculum additions included something for the students to keep, life size road signs, and hidden word puzzles. Concerning the masters, teachers requested easier masters, masters with more depth, masters with more creativity, and masters with activities on only one side of the page.

The data about the specific content areas were extremely sparse because there were so many K-6 content areas and so few teachers reporting use of the areas. These data were presented, however, for whatever interest value they may hold.

The majority of the K-6 teachers who were asked about an area reported teaching it with the exception of minicycle safety and farm vehicle safety in the 4-6 grade volume. In the main, the teachers who reported using the various content area materials also considered them to be either of "moderate" or of "considerable" value; "appropriate" for the grade level; and either "moderately" or "highly" interesting to the students.

Fifty-three or 27.9 percent of the K-6 teachers who used the curriculum provided comments concerning the content area assigned to their questionnaire. In general the comments indicated an interest in and contentment with each of the areas.

The principals' administrative appraisal of the program was also determined by a questionnaire survey. The principals were asked questions concerning their acceptance of the program, the enthusiasm of the teachers, inservice training, and administrative problems. Principals from twenty-five schools currently using the curriculum were mailed a questionnaire. Of these principals, 80.0 percent completed and returned the questionnaires.

The principals were fairly unanimous in reporting that the K-9 traffic safety curriculum should be incorporated as a permanent part of the school curriculum; that most of the teachers entered the program and taught the curriculum with "some" enthusiasm; and that no administrative problems were experienced. Interestingly, according to the principals the teachers' enthusiasm was somewhat greater after using the materials.

Thirteen or 65.0 percent of the principals returning the questionnaire provided comments concerning the K-9 traffic safety program. Several principals indicated a general acceptance of the program by describing it as "good", "excellent", "needed", and "effective". Problems mentioned included not receiving all the materials or receiving them too late, incorporating everything that needs to be taught into the school curriculum, and not having

enough time to evaluate the program. Suggestions from the principals included setting up a traffic safety center in the school library, involving local law enforcement officers, and providing additional inservice training.

On the basis of this evaluation, the following recommendations are offered:

1. Because the teachers' suggestions for changes in the curriculum are indicative of concern among the teachers, they should be given consideration when revisions are made.

2. Because the materials seem to be used so little on the 7-9 grade level, it appears that additional effort is needed to develop materials that can readily be integrated into the existing junior high program.

3. The entire package of traffic safety materials; including the games, signs, films, and filmstrips, should be made more accessible to the teachers.

4. Possibilities should be explored for providing some type of inservice training for the teachers involved in any further expanded program.

REFERENCES

Accident Facts, 1976 Edition. Chicago: National Safety Council, 1976.

Padgett, Susan S. and Waller, Patricia F. The Evaluation of the North Carolina K-9 Traffic Safety Curriculum. Chapel Hill: UNC Highway Safety Research Center, 1975.

Tatsuoka, M. Multivariate Analysis New York: Wiley and Sons, 1971.

APPENDIX A

Knowledge Tests

Name _____

School _____

TRAFFIC SAFETY TEST

Grade 3

Mark the true statements "T"
and the false statements "F"

1. Every person who walks from one place to another is a pedestrian. ___
2. A bicyclist should use hand signals for turning, slowing, and stopping. ___
3. The older children should board the school bus first. ___
4. You do not need seat belts if you are taking a short trip. ___
5. Where there is no sidewalk, a pedestrian should walk on the left shoulder, facing traffic. ___
6. A bicycle is a vehicle because it is a machine used for moving people. ___
7. You should cross at least twelve feet in front of the school bus. ___
8. Children do not need to wear safety belts when riding in a car. ___
9. A person wearing reflectorized material cannot be seen well at night. ___
10. A bicyclist should ride on the left facing traffic. ___
11. You should not walk towards the school bus while it is approaching. ___
12. Entering or exiting a car should be done from the curb side only. ___
13. You should run across the street to get to the other side as quickly as possible. ___
14. At intersections you should ride the bike across the street. ___
15. If you must stand on a bus, you should hold onto the back of two seats. ___

16. If car passengers have books or packages, they should be on the front seat. ___

17. It is best to cross the street only at intersections or crosswalks. ___

18. A car cannot stop instantly but must travel a certain distance before stopping. ___

19. The left hand pointed straight out means a right turn. ___

20. You should avoid being too early at the bus stop. ___

21. The shoulder harness of a seat belt is only recommended for people measuring 4'7" or taller. ___

22. A pedestrian's safety is heavily dependent upon his ability to hear. ___

23. Bicyclists must obey traffic signs. ___

24. You should use the handrail when entering or exiting the bus. ___

25. After entering a car, the passenger should lock the car door. ___

26. A pedestrian can have complete trust in the traffic light when deciding whether it is safe to cross the street. ___

27. Cracks in the pavement can throw a bicyclist off balance. ___

28. The children on a bus could cause the driver to have an accident. ___

29. In a car a baby should sit on the driver's lap. ___

30. When riding a bicycle, both hands should be on the handlebars except when signaling. ___

Name _____

School _____

TRAFFIC SAFETY TEST

Grade 6

Mark the true statements "T"
and the false statements "F"

1. A pedestrian is any traveler on foot. ___
2. Bikes are less maneuverable than cars. ___
3. You should talk to the school bus driver to help keep him alert. ___
4. Passengers should always get in and out of the car on the curb side. ___
5. Minibikes have a "lawn mower type" engine. ___
6. A pedestrian should walk on the left side of the road facing traffic. ___
7. A bicycle is a vehicle. ___
8. You should walk out double file when leaving the bus. ___
9. You do not need to wear seat belts if you are only taking a short trip. ___
10. No one under age sixteen can drive a minibike on any public roadway according to North Carolina law. ___
11. The only time a pedestrian should walk on the road or street is when he is crossing the street. ___
12. Friction helps moving objects come to a stop. ___
13. If you must stand on the bus, you should hold your books securely in your arms. ___
14. A safety belt is likely to trap a passenger in a burning automobile. ___
15. To slow a minicycle down, you should close the throttle and apply the brakes gently. ___
16. The pedestrian has the right-of-way within a pedestrian crossing and and at corners---nowhere else. ___
17. Momentum is the natural law which makes it hard to stop a moving body. ___

18. The school bus should stop ten feet from the children waiting for the bus. ___

19. In a crash motorists are often saved by being thrown out of a car. ___

20. Stopping distance will be shorter when driving a minicycle on gravel. ___

21. To jaywalk is to cross within the marked crosswalk. ___

22. To signal a right turn, a bicyclist puts his left arm and hand straight out. ___

23. In an emergency, the passengers in the seats nearest the school bus door(s) being used, should start out first. ___

24. You do not need to wear seat belts when driving at low speeds. ___

25. Miniature cycles are designed for two people. ___

26. It takes about 75 seconds to cross a four-lane street. ___

27. A bicyclist should drive on the left facing traffic. ___

28. The passenger plays an important part in school bus safety. ___

29. A shoulder harness should be worn with a lap belt, never without it. ___

30. On a minicycle, if one cannot safety steer around an obstacle, he should slow down and take the obstacle straight on. ___

Content areas by item number for third and sixth grade knowledge - tests

Grade 3 Test Items

	Total Items
Pedestrian Safety 1, 5, 9, 13, 17, 18, 22, 26	(8)
Bicycle Safety 2, 6, 10, 14, 19, 23, 27, 30	(8)
School Bus Safety 3, 7, 11, 15, 20, 24, 28	(7)
Passenger Safety 4, 8, 12, 16, 21, 25, 29	(7)

Grade 6 Test Items

Pedestrian Safety 1, 6, 11, 16, 21, 26	(6)
Bicycle Safety 2, 7, 12, 17, 22, 27	(6)
School Bus Safety 3, 8, 13, 18, 23, 28	(6)
Passenger Safety 4, 9, 14, 19, 24, 29	(6)
Minicycle Safety 5, 10, 15, 20, 25, 30	(6)

APPENDIX B

Questionnaire to Teachers

March 7, 1977

Dear

As you probably know, the University of North Carolina Highway Safety Research Center, in cooperation with the Department of Public Instruction, is evaluating the North Carolina K-9 Traffic Safety Curriculum. As part of this project, we are sending questionnaires to teachers in several schools involved in this program to obtain information concerning their use of the curriculum materials and their suggestions for improvements. We would very much appreciate your responding to the enclosed questionnaire relevant to grade _____.

Please do not feel restricted by the format of the questionnaire. The basic information we need is included; however, we would appreciate your including any additional information that you believe might be helpful on the back of the last page of the questionnaire.

It is only through careful systematic feedback from the teachers that it will be possible to improve the quality of the curriculum materials. Once the evaluation has been conducted and any revisions completed, the materials will be made available to teachers across the State.

It should be remembered that this survey is aimed at evaluating the curriculum materials, not the teachers or the schools. All information obtained from the teachers will be considered strictly confidential.

Thank you so very much for your cooperation. If you have any questiona about the survey please call Dr. Patricia Waller or Ms. Susan Padgett collect at (919) 933-2202.

Sincerely,

Susan S. Padgett

Susan S. Padgett
Research Associate

SSP:lwe

If you did not use the curriculum this academic year, please mark here and return the questionnaire. ☐

(For Teachers of _____grades)

QUESTIONNAIRE TO TEACHERS

CONCERNING

THE K-9 TRAFFIC SAFETY CURRICULUM

PLEASE PRINT

1. Name _____

2. School _____

3. Circle grade or grades that you are presently teaching:

K 1 2 3 4 5 6 7 8 9

SECTION I - The Traffic Safety Curriculum for Grade Levels _____.

4. Considering everything, please check your overall appraisal of the K-9 traffic safety curriculum.

(1) ☐ excellent
(2) ☐ good
(3) ☐ fair
(4) ☐ poor

5. To what extent did you use the K-9 traffic safety curriculum materials?

(1) ☐ not at all
(2) ☐ a little
(3) ☐ somewhat
(4) ☐ considerably

6. In what context were the materials used?

(1) ☐ as a separate unit
(2) ☐ integrated into existing curriculum
(3) ☐ both of the above

7. Did you find using the materials to be:

(1) ☐ very difficult
(2) ☐ somewhat difficult
(3) ☐ reasonable
(4) ☐ easy

8. What changes do you feel would be desirable in the materials, including additions and deletions?
Please write your comments here:

_____

_____

_____

_____

_____

_____

SECTION II - (Specific Area)
All of the following questions deal with the _____content area materials.

9. Did you teach the area of _____?

(1) ☐ yes
(2) ☐ no

If no, please explain why.

_____

_____

_____

If yes, please answer questions (10-15).

10. In terms of overall value for traffic safety education, do you feel the _____safety materials for the _____ grade level were

(1) ☐ of considerable value
(2) ☐ of moderate value
(3) ☐ of little value
(4) ☐ of no value

11. Were the _____safety materials appropriate for the _____ grade level?

(1) ☐ far too difficult
(2) ☐ a little too difficult
(3) ☐ appropriate
(4) ☐ too easy

12. In general, did the students find the _____materials dull or interesting?

(1) ☐ quite dull
(2) ☐ a little dull
(3) ☐ moderatley interesting
(4) ☐ highly interesting

13. What were the most helpful of the _____safety materials?

(1) ☐ masters for reproduction
(2) ☐ suggested activities
(3) ☐ concept information
(4) ☐ films, filmstrips, and games
(5) ☐ resource lists

14. What were the least helpful of the _____safety materials?

(1) ☐ masters for reproduction
(2) ☐ suggested activities
(3) ☐ concept information
(4) ☐ films, filmstrips, and games
(5) ☐ resource lists

15. If you have any suggestions, including additions or deletions, or comments concerning the _____safety materials, please write them in the space provided below.

_____

_____

_____

_____

_____

SECTION III - (Specific Area)
All of the following questions deal with the _____content area materials.

16. Did you teach the area of _____?

(1) ☐ yes
(2) ☐ no

If no, please explain why.

_____

_____

_____

If yes, please answer questions (17-22).

17. In terms of overall value for traffic safety education, do you feel the _____safety materials for the _____grade level were

(1) ☐ of considerable value
(2) ☐ of moderate value
(3) ☐ of little value
(4) ☐ of no value

18. Were the _____safety materials appropriate for the_____ grade level?

(1) ☐ far too difficult
(2) ☐ a little too difficult
(3) ☐ appropriate
(4) ☐ too easy

19. In general, did the students find the _____materials dull or interesting?

(1) ☐ quite dull
(2) ☐ a little dull
(3) ☐ moderately interesting
(4) ☐ highly interesting

20. What were the most helpful of the _____safety materials?

(1) ☐ masters for reproduction
(2) ☐ suggested activities
(3) ☐ concept information
(4) ☐ films, filmstrips, and games
(5) ☐ resource lists

21. What were the least helpful of the _____ safety materials?

(1) ☐ masters for reproduction
(2) ☐ suggested activities
(3) ☐ concept information
(4) ☐ films, filmstrips, and games
(5) ☐ resource lists

22. If you have any suggestions, including additions or deletions, or comments concerning the _____safety materials, please write them in the space provided below.

_____

_____

_____

_____

_____

SECTION IV - (Specific Area)
All of the following questions deal with the _____content area materials.

23. Did you teach the area of _____?

(1) ☐ yes
(2) ☐ no

If no, please explain why.

_____

_____

_____

If yes, please answer questions (24-29).

24. In terms of overall value for traffic safety education, do you feel the _____safety materials for the _____grade level were

(1) ☐ of considerable value
(2) ☐ of moderate value
(3) ☐ of little value
(4) ☐ of no value

25. Were the _____safety materials appropriate for the _____ grade level?

(1) ☐ far too difficult
(2) ☐ a little too difficult
(3) ☐ appropriate
(4) ☐ too easy

26. In general, did the students find the _____materials dull or interesting?

(1) ☐ quite dull
(2) ☐ a little dull
(3) ☐ moderatley interesting
(4) ☐ highly interesting

27. What were the most helpful of the _____safety materials?

(1) ☐ masters for reproduction
(2) ☐ suggested activities
(3) ☐ concept information
(4) ☐ films, filmstrips, and games
(5) ☐ resource lists

28. What were the least helpful of the _____safety materials?

(1) ☐ masters for reproduction
(2) ☐ suggested activities
(3) ☐ concept information
(4) ☐ films, filmstrips, and games
(5) ☐ resource lists

29. If you have any suggestions, including additions or deletions, or comments concerning the _____safety materials, please write them in the space provided below.

_____

_____

_____

_____

_____

SECTION V - (Specific Area)
All of the following questions deal with the _____content area materials.

30. Did you teach the area of _____?

(1) ☐ yes
(2) ☐ no

If no, please explain why.

_____

_____

_____

If yes, please answer questions (31-36).

31. In terms of overall value for traffic safety education, do you feel the _____safety materials for the _____grade level were

(1) ☐ of considerable value
(2) ☐ of moderate value
(3) ☐ of little value
(4) ☐ of no value

32. Were the _____safety materials appropriate for the _____ grade level?

(1) ☐ far too difficult
(2) ☐ a little too difficult
(3) ☐ appropriate
(4) ☐ too easy

33. In general, did the students find the _____materials dull or interesting?

(1) ☐ quite dull
(2) ☐ a little dull
(3) ☐ moderately interesting
(4) ☐ highly interesting

34. What were the most helpful of the _____safety materials?

(1) ☐ masters for reproduction
(2) ☐ suggested activities
(3) ☐ concept information
(4) ☐ films, filmstrips, and games
(5) ☐ resource lists

35. What were the least helpful of the _____safety materials?

(1) ☐ masters for reproduction
(2) ☐ suggested activities
(3) ☐ concept information
(4) ☐ films, filmstrips, and games

36. If you have any suggestions, including additions or deletions, or comments concerning the _____safety materials, please write them in the space provided below.

_____

_____

_____

_____

_____

APPENDIX C

Questionnaire to Principals

THE UNIVERSITY OF NORTH CAROLINA
HIGHWAY SAFETY RESEARCH CENTER
CHAPEL HILL, NORTH CAROLINA 27514

March 7, 1977

Dear

As you may be aware, the University of North Carolina Highway Safety Research Center is working with the North Carolina Department of Public Instruction to conduct an evaluation of the K-9 Traffic Safety Curriculum. As part of the evaluation, we are conducting a survey of principals and teachers involved in the program. We are requesting information from teachers concerning their use of the curriculum materials and their suggestions for improvements; and from principals concerning the ease with which the curriculum was implemented from an administrative standpoint and the extent to which they felt the entire effort worthwhile.

We have enclosed a questionnaire for you and one for each of the teachers in your school who may be using the curriculum materials. We would appreciate your distributing the questionnaires and requesting the teachers to please complete and return them as soon as possible. It is only through such careful systematic feedback that it will be possible to improve the quality of the curriculum materials.

We would like to emphasize that this effort is aimed at evaluating the curriculum, not the teachers, principals or schools. If you have any questions or problems with the survey please do not hesitate to call me collect at 919-933-2202 and we would be happy to do whatever we can to provide satisfactory answers and solutions.

Thank you very much for your cooperation.

Sincerely,

Susan S. Padgett

Susan S. Padgett
Research Associate

SSP:lwe

Questionnaire to Principals Concerning the K-9 Traffic Safety Program

Please Print.

1. Last Name_____
2. First Name_____
3. School_____
4. Grades in your school_____
5. Do you believe the K-9 traffic safety curriculum should be incorporated as a permanent part of the school curriculum for each of the following grade levels:

Levels	Yes	No	If no, please explain.
(1) K-1	___	___	_____
(2) 2-3	___	___	_____
(3) 4-6	___	___	_____
(4) 7-9	___	___	_____

6. Did the teachers enter the program with enthusiasm?
   - (1) None ___
   - (2) Some ___
   - (3) Much ___
   - (4) Very Much ___

7. Were the teachers enthusiastic about the program after several weeks of use?

   (1) None ___

   (2) Some ___

   (3) Much ___

   (4) Very Much ___

8. Do you feel the teachers need some kind of inservice training before teaching the curriculum?

   (1) Yes ___

   (2) No ___

   If yes, please explain.

   _____

   _____

9. Did you have any administrative problems with the K-9 traffic safety program?

   (1) Yes ___

   (2) No ___

   If yes, please explain.

   _____

   _____

10. Please write any changes, suggestions, or comments you have concerning the K-9 traffic safety program.

    _____

    _____

    _____

    _____

    _____

APPENDIX D

Tables

Table 1. Number of students tested by grade level, school system, and experimental group.

Grade Levels	School System A		School System B		
	Experimental	Control	Experimental	Control	Total
Third	57	45	45	57	204
Sixth	79	66	57	67	269
Total	136	111	102	124	473

Table 2. Questionnaire content areas by grade level.

Grade Level(s)	Content Areas
K-1	pedestrian safety bicycle safety school bus safety
2-3	pedestrian safety bicycle safety school bus safety
4-6	pedestrian safety bicycle safety school bus safety passenger safety minicycle safety farm vehicle safety
7	pedestrian safety bicycle safety school bus safety
8	pedestrian and bicycle safety review history of the automobile automobile safety features trip preparation traffic signs, signals and markings motorcycle safety
9	driver licensing the highway transportation system driving skills self evaluation of driving attitudes

Table 3. Teacher sample by year of school implementation and grade level: Frequency (Percentage) distribution.

Year of School Implementation	Teacher Sample at Different Grade Levels						
	K-1	2-3	4-6	7	8	9	Total
1975-76	52 (46.8)	59 (51.8)	78 (62.9)	25 (75.8)	24 (82.8)	8 (100.0)	246 (58.7)
1976-77	59 (53.2)	55 (48.2)	46 (37.1)	8 (24.2)	5 (17.2)	0 (0.0)	173 (41.3)
Total	111 (100.0)	114 (100.0)	124 (100.0)	33 (100.0)	29 (100.0)	8 (100.0)	419 (100.0)

Table 4. Mean scores by content area, exposure group and time of test.

	Pedestrian Safety		Bicycle Safety		School Bus Safety		Passenger Safety		Minicycle Safety	
Third Grade	Before	After	Before	After	Before	After	Before	After	Before	After
Experimental	4.7	6.0	6.0	6.5	5.7	5.9	4.8	5.5	-	-
Control	4.7	4.7	5.9	6.2	5.5	5.5	5.1	5.2	-	-
Sixth Grade										
Experimental	4.1	4.4	3.3	3.7	4.2	4.7	3.9	3.9	4.1	4.5
Control	4.2	4.3	3.1	3.4	4.4	4.6	4.1	4.0	4.1	4.4

Table 5. Results (P) of univariate analyses of covariance.

	Grade	
	Third	Sixth
Pedestrian Safety	.001	.292
Bicycle Safety	.027	.207
School Bus Safety	.054	.126
Passenger Safety	.036	.999
Minicycle Safety	-	.193

Table 6. Reported use and nonuse of the K-9 Traffic Safety Curriculum during the 1976-77 school year by grade level: Frequency (percentage) distribution.

	Grade Levels				
Curriculum	K-1	2-3	4-6	7-9	Total
Yes	59 (86.8%)	69 (93.2%)	62 (76.5%)	12 (27.3%)	202 (75.7%)
No	9 (13.2%)	5 (6.8%)	19 (23.5%)	32 (72.7%)	65 (24.3%)
Total	68 (100.0%)	74 (100.0%)	81 (100.0%)	44 (100.0%)	267 (100.0%)

Note: Only the responses of the K-6 grade teachers who reported using the curriculum are included in all the tables that follow. Of these teachers 51.0 percent are from schools which implemented the curriculum during school year 1975-76, and 49.0 percent are from schools which implemented the curriuclum during school year 1976-77.

Table 7. Overall appraisal of the K-9 traffic safety curriculum by grade level: Frequency (percentage) distribution.

Overall Appraisal	Grade Level K-1	2-3	4-6
Excellent	21 (35.6)	26 (38.2)	26 (41.9)
Good	34 (57.6)	39 (57.4)	34 (54.8)
Fair	4 (6.8)	3 (4.4)	2 (3.3)
Poor	0 (0.0)	0 (0.0)	0 (0.0)
Total	59 (100.0)	68 (100.0)	62 (100.0)

Note: Total (N) may be different from table to table due to teachers' non-response to certain questionnaire items.

Table 8. Extent of use of curriculum materials by grade level: Frequency (percentage) distribution.

Extent of Curriculum Use	Grade Level K-1	2-3	4-6
Not at all	0 (0.0)	0 (0.0)	0 (0.0)
A little	12 (20.3)	18 (26.5)	12 (19.4)
Somewhat	30 (50.9)	28 (41.2)	32 (51.6)
Considerably	17 (28.8)	22 (32.3)	18 (29.0)
Total	59 (100.0)	68 (100.0)	62 (100.0)

Table 9. Context in which curriculum materials were used by grade level: Frequency (percentage) distribution.

Context of Use	Grade Level K-1	2-3	4-6
As a separate unit	10 (16.9)	12 (17.6)	10 (16.1)
Integrated into existing curriculum	22 (37.3)	18 (26.5)	26 (41.9)
Both of the above	27 (45.8)	38 (55.9)	26 (42.0)
Total	59 (100.0)	68 (100.0)	62 (100.0)

Table 10. Ease of use of curriculum materials by grade level.

	Grade Level		
Ease of Use	K-1	2-3	4-6
Very difficult	0 (0.0)	0 (0.0)	0 (0.0)
Somewhat difficult	3 (5.2)	4 (5.9)	3 (4.8)
Reasonable	41 (70.7)	46 (68.7)	43 (69.4)
Easy	14 (24.1)	17 (25.4)	16 (25.8)
Total	58 (100.0)	67 (100.0)	62 (100.0)

Table 11. Teacher recommendations for changes in the K-9 traffic safety materials by grade level: Frequency distribution.

	Comments	Grade Levels K-1	2-3	4-6
1.	More activities, i.e. plays, songs, games.	6	2	2
2.	More materials for rural children.	1	1	
3.	More pictures.	1	2	
4.	More films and filmstrips		2	
5.	More records and tapes.		1	
6.	More emphasis on bus safety.	1		
7.	Add something for students to keep.		1	
8.	Add "life-size" road signs		1	
9.	Add hidden word puzzles.			1
10.	List only films available free.	1		
11.	Put activities on one side of page only for better thermofaxing.	2	1	
12.	Provide master units in sets for teacher sharing.			1
13.	Provide copies of activities for all pupils rather than masters for thermofaxing.			1
14.	Provide masters with more "depth".		1	
15.	Provide masters with more "creativity."		1	
16.	Provide easier masters.		1	
17.	No deletions indicated.		1	
18.	No changes indicated.	8	5	7

Table 12. Teacher comments concerning the K-9 traffic safety materials by grade level: Frequency distribution.

	Comments	Grade Levels K-1	2-3	4-6
1.	Materials excellent	1		1
2.	Materials good	2	3	1
3.	Materials satisfactory or adequate	2	3	
4.	Materials thorough or complete	2	2	2
5.	Materials interesting	1		2
6.	Materials useful or helpful, i.e., songs, poems, and traffic signs	5	1	2
7.	Materials easy to use		2	
8.	Materials informative		1	
9.	Materials meet needs of pupils		1	1
10.	Materials well planned	1		1
11.	Materials appropriate for grade level	1		1
12.	Materials used a lot			1
13.	Materials easily "adapted" into curriculum	1		
14.	Materials enjoyed by students		5	
15.	Happy with materials		1	1
16.	Liked variety to choose from	1		
17.	School bus materials excellent	1		
18.	Safety booklet good	1		
19.	Filmstrips good		1	
20.	Jiminy Cricket series good	1		
21.	"All Ears" good		1	

Table 12. Continued.

	Comments	Grade Levels K-1	2-3	4-6
22.	"Bike Clinic" good			1
23.	Skill games good.			1
24.	Puzzles interesting to students.			1
25.	Materials too "massive".			1
26.	Materials too difficult.	1		1
27.	Bar graphs too difficult.			1
28.	Bicycle concept III too difficult.			1
29.	Games too complicated.			1
30.	Masters too difficult.	1		
31.	Tape too "stilted" and not interesting to pupils.		1	
32.	Some masters left too little for children to do.	1		
33.	Farm vehicle material not relevant.			1
34.	Some materials not available, i.e., games, and filmes.	2	2	
35.	Have not covered all materials.	3	1	
36.	Not enough time to cover all materials.			1
37.	Problem scheduling safety in already overcrowded day.			1
38.	Took much planning to cover all materials.			1
39.	Colorful pictures have more appeal to children.		1	
40.	Each teacher needs her own set of materials			1
41.	Should be required part of curriculum.			1

Table 13. Reported teaching and nonteaching of specific curriculum areas by teachers of K-1 grades: Frequency (percentage) distribution.

	Curriculum Area			
Taught	Pedestrian Safety	Bicycle Safety	School Bus Safety	Passenger Safety
Yes	11 (91.7)	10 (66.6)	18 (90.0)	10 (83.3)
No	1 (8.3)	5 (33.3)	2 (10.0)	2 (16.7)
Total	12 (100.0)	15 (100.0)	20 (100.0)	12 (100.0)

Note: Number of responses may vary from table to table because not all teachers responded to every questionnaire item.

Table 14. Overall value of specific curriculum area materials for grades K-1: Frequency (percentage) distribution.

Overall Value	Curriculum Areas			
	Pedestrian Safety	Bicycle Safety	School Bus Safety	Passenger Safety
Of considerable value	11 (100.0)	6 (60.0)	10 (58.8)	6 (60.0)
Of moderate value	0 (0.0)	4 (40.0)	7 (41.2)	4 (40.0)
Of little value	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Of no value	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Total	11 (100.0)	10 (100.0)	17 (100.0)	10 (100.0)

Table 15. Appropriateness of the specific curriculum area materials for grades K-1: Frequency (percentage) distribution.

Appropriateness	Curriculum Areas: Pedestrian Safety	Bicycle Safety	School Bus Safety	Passenger Safety
Far too difficult	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
A little too difficult	0 (0.0)	4 (40.0)	2 (11.1)	2 (20.0)
Appropriate	11 (100.0)	6 (60.0)	15 (83.3)	8 (80.0)
Too easy	0 (0.0)	0 (0.0)	1 (5.5)	0 (0.0)
Total	11 (100.0)	10 (100.0)	18 (100.0)	10 (100.0)

Table 16. Teacher judgment of the degree of interest of the specific area materials for K-1 grade level students: Frequency (percentage) distribution.

Degree of Interest	Pedestrian Safety	Bicycle Safety	School Bus Safety	Passenger Safety
Quite dull	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
A little dull	0 (0.0)	2 (20.0)	1 (5.6)	2 (20.0)
Moderately interesting	5 (45.5)	2 (20.0)	12 (66.6)	7 (70.0)
Highly interesting	6 (54.5)	6 (60.0)	5 (27.8)	1 (10.0)
Total	11 (100.0)	10 (100.0)	18 (100.0)	10 (100.0)

Table 17. Materials considered most helpful in the specific areas for grades K-1: Frequency (percentage) distribution.

Materials Considered Most Helpful	Curriculum Areas: Pedestrian Safety	Bicycle Safety	School Bus Safety	Passenger Safety
Masters for reproduction	1 (20.0)	0 (0.0)	0 (0.0)	1 (14.3)
Suggested activities	2 (40.0)	1 (16.7)	1 (12.5)	2 (28.5)
Content for discussion	1 (20.0)	0 (0.0)	3 (37.5)	1 (14.3)
Films, filmstrips, and games	1 (20.0)	4 (66.6)	4 (50.0)	3 (42.9)
Resource list	0 (0.0)	1 (16.7)	0 (0.0)	0 (0.0)
Total	5 (100.0)	6 (100.0)	8 (100.0)	7 (100.0)

Table 18. Materials considered least helpful in the specific areas for grades K-1: Frequency (percentage) distribution.

Materials Considered Least Helpful	Curriculum Areas: Pedestrian Safety	Bicycle Safety	School Bus Safety	Passenger Safety
Masters for reproduction	1 (12.5)	4 (44.4)	5 (50.0)	2 (28.6)
Suggested activities	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Content for discussion	1 (12.5)	1 (1.1)	0 (0.0)	0 (0.0)
Films, filmstrips, and games	0 (0.0)	1 (1.1)	1 (10.0)	1 (14.3)
Resource lists	6 (75.0)	3 (33.3)	4 (40.0)	4 (57.1)
Total	8 (100.0)	9 (99.9)	10 (100.0)	7 (100.0)

Table 19. Comments concerning the K-1 content areas.

Pedestrian Safety

1. Did not receive signs.
2. Resource list would be more helpful if it had the type of information available from each organization.
3. Materials well planned.
4. Materials helpful.

Bicycle Safety

1. Did not receive films, filmstrips or games.
2. Children not interested in parts of bicycle
3. Enjoyed adapting materials to class.
4. Materials good.
*5. No changes indicated.

School Bus Safety

1. Delete booklet, "Here's How we Ride the School Bus." Let children make their own booklets.
2. Enjoyed school bus materials best.
3. Used suggested activities and discussion materials most.
4. Children enjoyed program.
5. Successful way to teach school bus safety.

Passenger Safety

1. Materials satisfactory.
2. No changes indicated.

*Comment provided by more than one teacher.

Table 20. Reported teaching and nonteaching of specific curriculum areas by teachers of grades 2-3: Frequency (percentage) distribution.

	Curriculum Areas			
Taught	Pedestrian Safety	Bicycle Safety	School Bus Safety	Passenger Safety
Yes	16 (100.0)	13 (86.7)	21 (100.0)	14 (82.4)
No	0 (0.0)	2 (13.3)	0 (0.0)	3 (17.6)
Total	16 (100.0)	15 (100.0)	21 (100.0)	17 (100.0)

Table 21. Overall value of specific curriculum area materials for grades 2-3: Frequency (percentage) distribution.

Overall Value	Curriculum Areas: Pedestrian Safety	Bicycle Safety	School Bus Safety	Passenger Safety
Of considerable value	13 (81.3)	10 (76.9)	13 (61.9)	9 (64.3)
Of moderate value	3 (18.7)	3 (23.1)	8 (38.1)	5 (35.7)
Of little value	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Of no value	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Total	16 (100.0)	13 (100.0)	21 (100.0)	14 (100.0)

Table 22. Appropriateness of the specific curriculum area materials for grades 2-3: Frequency (percentage) distribution.

Appropriateness	Curriculum Areas: Pedestrian Safety	Bicycle Safety	School Bus Safety	Passenger Safety
Far too difficult	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
A little too difficult	3 (18.7)	1 (7.7)	3 (14.3)	2 (15.4)
Appropriate	13 (81.3)	12 (92.3)	18 (85.7)	10 (76.9)
Too easy	0 (0.0)	0 (0.0)	0 (0.0)	1 (7.7)
Total	16 (100.0)	13 (100.0)	21 (100.0)	13 (100.0)

Table 23. Teacher judgment of the degree of interest of the specific area materials for 2-3 grade level students: Frequency (percentage) distribution.

Degree of Interest	Curriculum Areas: Pedestrian Safety	Bicycle Safety	School Bus Safety	Passenger Safety
Quite dull	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
A little dull	0 (0.0)	0 (0.0)	3 (15.0)	1 (7.7)
Moderately interesting	6 (40.0)	4 (33.3)	11 (55.0)	10 (76.9)
Highly interesting	9 (60.0)	8 (66.6)	6 (30.0)	2 (15.4)
Total	15 (100.0)	12 (99.9)	20 (100.0)	13 (100.0)

Table 24. Materials considered most helpful in the specific areas for grades 2-3: Frequency (percentage) distribution.

Materials Considered Most Helpful	Curriculum Areas: Pedestrian Safety	Bicycle Safety	School Bus Safety	Passenger Safety
Masters for reproduction	2 (20.0)	1 (9.1)	1 (6.7)	2 (25.0)
Suggested activities	7 (70.0)	4 (36.4)	6 (40.0)	2 (25.0)
Content for discussion	0 (0.0)	3 (27.3)	5 (33.3)	2 (25.0)
Films, filmstrips, and games	1 (10.0)	3 (27.3)	3 (20.0)	1 (12.5)
Resource list	0 (0.0)	0 (0.0)	0 (0.0)	1 (12.5)
Total	10 (100.0)	11 (100.1)	15 (100.0)	8 (100.0)

Table 25. Materials considered least helpful in the specific areas for grades 2-3: Frequency (percentage) distributions.

Materials Considered Least Helpful	Curriculum Areas: Pedestrian Safety	Bicycle Safety	School Bus Safety	Passenger Safety
Masters for reproduction	2 (12.5)	1 (7.7)	1 (4.8)	1 (7.1)
Suggested activities	0 (0.0)	0 (0.0)	1 (4.8)	1 (7.1)
Content for discussion	0 (0.0)	1 (7.7)	1 (4.8)	1 (7.1)
Films, filmstrips, and games	0 (0.0)	2 (15.4)	1 (4.8)	0 (0.0)
Resource list	9 (56.3)	4 (30.8)	10 (47.6)	7 (50.0)
Total	11 (100.0)	8 (100.1)	14 (100.1)	10 (99.9)

Table 26. Comments concerning the 2-3 level content areas.

Pedestrian Safety

1. Add more resource material.
2. Add "life size" road signs.
*3. Materials helpful.
*4. Materials interesting.
5. Materials appropriate for grade level.
6. Materials practical, thorough and fun.
7. Some activities too difficult.

Bicycle Safety

1. Include section on danger of riding bikes on rural roads.
*2. Materials adequate.
3. Filmstrips good.
4. Bicycle clinic follow-up too complicated.
5. No changes indicated.

School Bus Safety

1. Add more masters and activities for slow learners.
2. Add more group participation activities.
3. Needed films and filmstrips.
4. Filmstrips held interest and generated discussion.
5. Masters good aids.
6. Children enjoyed discussing school bus experiences.
7. Delete none of the activities. Liked the variety.
8. No changes indicated.

Passenger Safety

1. Good program.
2. Audio visual materials not available.
3. Problem finding time to teach unit.

* Comments provided by more than one teacher.

Table 27. Reported teaching and nonteaching of specific curriculum areas by teachers of grades 4-6: Frequency (percentage) distribution.

	Curriculum Area					
Taught	Pedestrian Safety	Bicycle Safety	School Bus Safety	Passenger Safety	Minicycle Safety	Farm Vehicle Safety
Yes	6 (66.6)	10 (83.3)	11 (84.6)	6 (85.7)	5 (50.0)	5 (45.5)
No	3 (33.3)	2 (16.7)	2 (15.4)	1 (14.3)	5 (50.0)	6 (54.5)
Total	9 (99.9)	12 (100.0)	13 (100.0)	7 (100.0)	10 (100.0)	11 (100.0)

Table 28. Overall value of specific curriculum pedestrian materials for grades 4-6: Frequency (percentage) distribution.

Overall Value	Curriculum Areas: Pedestrian Safety	Bicycle Safety	School Bus Safety	Passenger Safety	Minicycle Safety	Farm Vehicle Safety
Of considerable value	3 (50.0)	4 (40.0)	7 (63.6)	5 (83.3)	3 (60.0)	3 (60.0)
Of moderate value	3 (50.0)	5 (50.0)	4 (36.4)	1 (16.7)	2 (40.0)	2 (40.0)
Of little value	0 (0.0)	1 (10.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Of no value	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Total	6 (100.0)	10 (100.0)	11 (100.0)	6 (100.0)	5 (100.0)	5 (100.0)

Table 29. Appropriateness of the specific curriculum area materials for grades 4-6: Frequency (percentage) distribution.

Appropriateness	Curriculum Areas: Pedestrian Safety	Bicycle Safety	School Bus Safety	Passenger Safety	Minicycle Safety	Farm Vehicle Safety
Far too difficult	0 (0.0)	0 (0.0)	9 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
A little too difficult	0 (0.0)	1 (10.0)	1 (9.1)	0 (0.0)	1 (20.0)	0 (0.0)
Appropriate	6 (100.0)	8 (80.0)	10 (90.9)	4 (66.6)	4 (80.0)	5 (100.0)
Too easy	0 (0.0)	1 (10.0)	0 (0.0)	2 (33.3)	0 (0.0)	0 (0.0)
Total	6 (100.0)	10 (100.0)	11 (100.0)	6 (99.9)	5 (100.0)	5 (100.0)

Table 30. Teacher judgement of the degree of interest of the specific area materials for 4-6 grade-level students: Frequency (percentage) distribution.

Degree of Interest	Curriculum Areas					
	Pedestrian Safety	Bicycle Safety	School Bus Safety	Passenger Safety	Minic/cle Safety	Farm Vehicle Safety
Quite dull	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
A little dull	0 (0.0)	2 (20.0)	1 (9.1)	0 (0.0)	0 (0.0)	1 (20.0)
Moderately interesting	4 (66.6)	6 (60.0)	7 (63.6)	5 (100.0)	1 (25.0)	4 (80.0)
Highly interesting	2 (33.3)	2 (20.0)	3 (27.3)	0 (0.0)	3 (75.0)	0 (0.0)
Total	6 (99.9)	10 (100.0)	11 (100.0)	5 (100.0)	4 (100.0)	5 (100.0)

Table 31. Materials considered most helpful in the specific areas for grades 4-6: Frequency (percentage) distribution.

Materials Considered Most Helpful	Curriculum Areas: Pedestrian Safety	Bicycle Safety	School Bus Safety	Passenger Safety	Minicycle Safety	Farm Vehicle Safety
Masters for reproduction	1 (100.0)	0 (0.0)	2 (28.6)	0 (0.0)	0 (0.0)	1 (33.3)
Suggested activities	0 (0.0)	1 (16.7)	1 (14.3)	1 (33.3)	1 (33.3)	0 (0.0)
Content for discussion	0 (0.0)	2 (33.3)	3 (42.8)	1 (33.3)	1 (33.3)	1 (33.3)
Films, filmstrips, and games	0 (0.0)	3 (50.0)	1 (14.3)	1 (33.3)	1 (33.3)	1 (33.3)
Rosource list	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Total	1 (100.0)	6 (100.0)	7 (100.0)	3 (100.0)	3 (100.0)	3 (100.0)

Table 32. Materials considered least helpful in the specific areas for grades 4-6: Frequency (percentage) distribution.

Materials Considered Least Helpful	Curriculum Areas: Pedestrian Safety	Bicycle Safety	School Bus Safety	Passenger Safety	Minicycle Safety	Farm Vehicle Safety
Masters for reproduction	0 (0.0)	2 (25.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Suggested activities	0 (0.0)	0 (0.0)	0 (0.0)	1 (20.0)	1 (33.3)	0 (0.0)
Content for discussion	0 (0.0)	0 (0.0)	1 (11.1)	0 (0.0)	0 (0.0)	1 (20.0)
Films, filmstrips, and games	1 (25.0)	0 (0.0)	2 (22.2)	1 (20.0)	0 (0.0)	0 (0.0)
Resource list	3 (75.0)	6 (75.0)	6 (66.6)	3 (60.0)	2 (66.6)	4 (80.0)
Total	4 (100.0)	8 (100.0)	9 (99.9)	5 (100.0)	3 (100.0)	5 (100.0)

Table 33. Comments concerning the 4-6 level content areas.

Pedestrian Safety

1. Unable to obtain some requested material due to cost.
2. Appreciate material.

Bicycle Safety

1. Place more emphasis on rural area.
2. Simplify materials for fourth grade students.
3. Materials complete.
4. Materials interesting and meaningful.

School Bus Safety

1. Provide copies of items per class enrollment rather than masters.
2. Films primarily used.
3. Materials interesting, informative, and needed.
4. Materials useful.
5. Not as valuable to my class as pedestrian unit.
6. No changes indicated.

Passenger Safety

1. Some material too primary for students.

Minicycle Safety

(No comments provided.)

Farm Vehicle Safety

1. Important area for my class.
2. "Authors seem to be strangers to the farm."
3. Not as interesting as other parts.

Table 34. Principals' opinion on whether the K-9 traffic safety curriculum should be incorporated as a permanent part of the school curriculum by grade level: Frequency (percentage) distribution.

Principals' Opinion	Grade Levels K-1	2-3	4-6	7-9
Should be incorporated as a permanent part of school curriculum	18 (94.7)	17 (94.4)	14 (100.0)	14 (100.0)
Should not be incorporated as a permanent part of school curriculum	1 (5.3)	1 (5.6)	0 (0.0)	0 (0.0)
Total	19 (100.0)	18 (100.0)	14 (100.0)	14 (100.0)

Note: The total frequency may be different from column to column and from table to table due to principals' non-response to certain questionnaire items.

Table 35. Principals' judgment of level of enthusiasm of teachers entering the program: Frequency (percentage) distribution.

Level of Enthusiasm	
None	0 (0.0)
Some	15 (75.0)
Much	3 (15.0)
Very Much	2 (10.0)
Total	20 (100.0)

Table 36. Principals' judgment of level of enthusiasm of teachers about the program after several weeks of use: Frequency (percentage) distribution.

Level of enthusiasm		
None	0	(0.0)
Some	14	(70.0)
Much	5	(25.0)
Very Much	1	(5.0)
Total	20	(100.0)

Table 37. Principals' judgment concerning the need for inservice training before teaching the curriculum: Frequency (percentage) distribution.

Principals' Judgment	
Inservice training needed	15 (75.0)
Inservice training not needed	5 (25.0)
Total	20 (100.0)

Table 38. Administrative problems reported with the K-9 traffic safety program: Frequency (percentage) distribution.

Administrative Problems	
Problems reported	1 (5.0)
No problems reported	19 (95.0)
Total	20 (100.0)

Table 39. Principals' comments concerning the K-9 traffic safety curriculum.

Comments

1. Good program.
2. Excellent program.
3. Needed program.
4. Effective program.
5. First year with materials has been a "learning year." Next year will have "maximum utilization of all materials."
6. All materials not received until mid-year.
7. Never received traffic signs.
8. Teachers did an excellent job incorporating program into total curriculum.
9. Problem trying to incorporate everything that needs to be taught into curriculum. Tried to incorporate traffic safety into Social Studies, Language Arts, Health and Math.
10. Have been involved implementing another new program, and consequently have not had sufficient time to evaluate the traffic safety program.
11. Set up a center with material for students in library.
12. Involve local law enforcement officers.
13. Provide additional inservice training.